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Psychological climate predicting job insecurity through occupational self-efficacy

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Introduction

Job insecurity – a perceived threat of involuntary job loss (Sverke *et al.*, 2002) – has been identified among the most severe work stressors (De Witte, 2005). Its negative effects on a broad spectrum of individual and organizational outcomes (e.g., job satisfaction, mental health and turnover intention) have been previously demonstrated (for meta-analyses, see Cheng and Chan, 2008; Sverke *et al.*, 2002; for a review of longitudinal effects, see De Witte *et al.*, 2016) and recent large scale studies indicate that the number of job-insecure employees in Europe includes several million people (cf. De Witte, 2005).

One of the most "harmful ingredients" related to job insecurity concerns a feeling of uncertainty about what might happen with one's current job in the future. This feature makes job insecurity a particularly cumbersome stressor to cope with, where not knowing whether job loss will actually occur makes it difficult for an employee to take concrete actions and prepare for the future (e.g., by starting to look for another job) (Smet *et al.*, 2016). For this reason, research aimed at understanding the job insecurity antecedents that might be utilized for preventing or reducing the experience of job insecurity is important for promoting employees' well-being. Despite its potential benefit, such research still represents an understudied area. To illustrate, the majority of studies included in Keim *et al.*'s (2014) meta-analysis on the antecedents of job insecurity examined variables that are either beyond the scope of influence (e.g., employees' age and education) or represent rather stable personality traits (e.g., locus of control).

In response, the present study aims to investigate job insecurity antecedents in the realm of the employee's *work environment (WE)* and the mechanism underlying these relationships. We believe that knowledge about whether and how diverse WE variables predict job insecurity represents a promising avenue through which this harmful stressor might be reduced.

Specifically, WE antecedents are susceptible to change and anchored to the work context, both features that make them directly applicable in organizational interventions and policies. The existing research encourages this line of reasoning by demonstrating significant relationships between several WE dimensions (e.g., organizational communication, role ambiguity, role conflict) and job insecurity (cf. Keim *et al.*, 2014). However, these studies have neglected two relevant issues that might provide a more complete understanding of the role of WE in perceptions of job insecurity.

The first issue addresses the question concerning *the relative contribution of diverse WE variables* in predicting job insecurity. In this regard, none of the existing studies departed from a theoretically grounded model of WE, which would have enabled a simultaneous analysis of variables representing distinct WE domains. Instead, most of these studies focused on a single domain (e.g., role characteristics), while at the same time failing to account for other important domains (e.g., job characteristics) (e.g., Ashford *et al.,* 1989). In response, the present study utilized the *psychological climate (PC) model* derived from the seminal work of James and colleagues (e.g., James *et al.*, 2008; James and James, 1989). According to this model, PC represents a molar construct composed of four dimensions: job challenge and autonomy, role stress and lack of harmony, leader support and facilitation and work-group cooperation, warmth and friendliness. Each dimension subsumes a comprehensive set of WE variables.

The second issue pertains to the question of *how* WE variables relate to job insecurity. Although this topic has been alluded to in several studies (e.g., Vander Elst *et al.,* 2010), empirical inquiry into mediators of the relationships between WE dimensions and job insecurity is still limited (for exceptions, see Richter *et al*., 2018; Smet *et al.*, 2016). In response, we

introduce occupational self-efficacy as a potential mediator in the relationships between PC dimensions and job insecurity.

To summarize, the present study aims to contribute to the current literature in two ways. First, the PC framework enables an all-encompassing and theoretically driven investigation of WE antecedents of job insecurity by allowing for a simultaneous consideration of four distinct domains (i.e., jobs, roles, leaders and work-groups) that reflect how employees cognitively organize the most salient WE variables (James *et al.,* 2008). Accordingly, the study examines the relative importance of diverse WE antecedents of job insecurity. We believe this knowledge will allow for a more accurate understanding that realistically reflects the multivariate nature of WEs. Second, the present study offers a unique contribution to the literature by placing the focus on occupational self-efficacy as the mediator in the relationships between dimensions of PC and job insecurity. Although the specific links between these variables have not been examined to date, they may prove to be relevant in further developing theory and effective interventions designed to reduce job insecurity perceptions.

Psychological climate

Psychological climate is defined as an individual's psychologically meaningful cognitive representation of relatively proximal WE attributes (Parker *et al.,* 2003). James and James (1989) conceptualized PC as a set of four higher-order factors that were empirically derived from extensive validation studies[1]. The authors started with an exhaustive literature review aiming to "develop a comprehensive measure of the perceptual domains that are psychologically meaningful and significant for most individuals in work environments" (James and Sells, 1981, p. 281). As a result, they identified 35 *a priori* composites (i.e., measures of WE attributes) administered across diverse samples (e.g., the US Navy, ICT specialists, firefighters). Based on

the results of exploratory and confirmatory factor analyses, the authors demonstrated that a comprehensive set of WE attributes can be loaded onto factors that were defined by four situational referents (i.e., jobs, roles, leaders and work-group) and conceptually corresponded to the four most relevant work-related values (i.e., desire for challenge, independence and responsibility; desire for clarity, harmony and justice; desire for work facilitation, support and recognition; and desire for warm and friendly social relations – see Locke, 1976) (James and James, 1989). For example, measures of job challenge and variety, job importance and job autonomy invariantly loaded onto a single factor called job challenge and autonomy. These results led authors to argue that PC dimensions represent value-engendered schemas that individuals employ to evaluate (1) job tasks, with regards to their potential to enable autonomous engagement in challenging and important assignments; (2) roles, with regards to their potential to hinder the fulfillment of one's responsibilities; (3) leaders, with regards to the extent to which (s)he facilitates the subordinate's work and encourages him/her to participate in important decisions; and (4) work-groups, with regards to their cooperativeness and friendliness. In the present study, we have drawn upon the conceptual core of PC dimensions and, for reasons of parsimony, will refer to them as job challenge, role harmony, leader support and co-worker cooperation from this point onwards[2].

We believe that the PC model is a particularly good fit with the aim of the present study for two reasons. First, each higher-order PC factor reflects the conceptual similarities between more specific WE attributes. As such, it represents a more generalized and parsimonious conceptualization of the four WE domains, whose meaning is above and beyond that of any particular sub-dimension. This is important because higher-order abstractions of more specific dimensions should provide more predictive power (cf. Fugate and Kinicki, 2008). Second, PC is

an inherently subjective construct that reflects the unique meanings employees impute to their jobs, roles, leader and co-workers (James *et al.*, 2008). We believe that the subjective interpretation of environmental stimuli, rather than the objective environment *per se*, should allow for maximum prediction of occupational self-efficacy and job insecurity, both of which are also highly subjective phenomena (cf. James *et al.*, 1978).

Occupational self-efficacy

Self-efficacy is defined as an individual's confidence in his/her capabilities to successfully fulfill various tasks and exercise influence over relevant events (Bandura, 1994). This concept has been widely used in organizational research due to its potential to predict relevant job-related outcomes, e.g. job performance and satisfaction (cf. Judge and Bono, 2001). Bandura argued that prediction is best achieved if one utilizes a domain-specific assessment of self-efficacy that matches the outcome of interest. We believe that occupational efficacy serves this purpose well: while job insecurity refers to one's perceived probability of losing his/her job (Sverke *et al.*, 2002), occupational efficacy is defined as an individual's confidence in his/her abilities to successfully perform a job and master various job-related challenges (Schyns and von Collani, 2002).

PC and occupational self-efficacy as resources framed in a mediational model

The hypotheses of the present study are derived from the Conservation of Resources (COR) theory, which defines resources as all entities that people centrally value or that serve as means to obtain these valued entities (Hobfoll, 2001). In line with this definition, stable employment has been classified as a COR resource (cf. Hobfoll, 2001), where it not only provides a means of survival (i.e. income), but also enables the acquisition of other resources

(e.g. social networks and status) (Jahoda, 1982). Accordingly, job insecurity represents a perceived threat to a valuable resource that consequently leads to strain (De Cuyper *et al.*, 2012).

The COR theory postulates that people are motivated to protect the things that they value. However, in order to do so, they need to invest resources they already possess. As a result, those who possess more resources are generally more capable of protecting their resources, while those with fewer resources are more vulnerable to resource loss (Hobfoll, 2018). Building on these COR principles, we anticipate that employees will be motivated to counteract the perceived threat of potential job loss. However, the extent to which this is successful will depend on the level of available resources: those with more resources may feel more secure about keeping their job, whereas those who are less resource-endowed may experience higher levels of job insecurity (Holmgreen *et al.*, 2017). The present study places the focus on two distinct categories of employee resources that might negatively predict job insecurity – PC and occupational self-efficacy – and frames them in a mediational model. In particular, we hypothesize that (1) each PC dimension has a unique negative contribution to explaining variance in job insecurity and (2) the relationship between PC dimensions and job insecurity is partially mediated by occupational self-efficacy. These assumptions are further elaborated in the following paragraphs.

PC and job insecurity

Stemming from COR principles, we suggest that employees working in resource-rich environments may perceive less threat of a potential job loss. In this regard, each PC dimension is assumed to function as an external resource that is linked to an employee's WE (Holmgreen *et al.*, 2017). Indeed, the assumptions about dimensions of PC are consistent with the definition of COR resources. First, because PC dimensions are presumably engendered by work-relevant values, they encompass personally valuable aspects of WEs (James *et al*., 2008). Second, the

dimensions of PC may be conducive for the attainment of other resources, such as psychological well-being (cf. Parker *et al*., 2003). Accordingly, we postulate that each PC dimension will negatively relate to job insecurity.

More specifically, job challenge may foster employees' human capital and job performance (cf. Hackman and Oldham, 1976), making them more valuable to the organization and less vulnerable to potential job loss (De Cuyper *et al.,* 2008). Because we are not aware of any studies that have utilized higher-order PC factors in relation to job insecurity, we refer to a reasonable proxy - results obtained on separate PC sub-dimensions - in the remainder of this paper. In this regard, Mauno and Kinnunen (2002) found a negative relationship between job control and job insecurity. In addition, Feather and Rauter (2004) demonstrated that job insecurity negatively related to skill utilization and influence (two constructs that conceptually correspond to job challenge and job autonomy), but failed to demonstrate a significant relationship between job insecurity and variety. Taking into account these theoretical arguments and empirical results, we hypothesize:

H1. Job challenge relates negatively to job insecurity.

Role harmony may facilitate employee fulfillment of prescribed roles, where employees who are clear about and consistent with their job responsibilities should more easily complete these responsibilities (Keim *et al.*, 2014). In turn, these employees might feel less anxious about and more in control over their future job situation (Ashford *et al*., 1989). Consistent with these assumptions, Keim *et al.*'s (2014) meta-analysis revealed positive associations between both role ambiguity and role conflict and job insecurity. Based on these results, we further hypothesize:

H2. Role harmony relates negatively to job insecurity.

Support from workplace leaders may also facilitate job performance and indicate to employees that they are valuable members of their organization (Shoss, 2017). In this regard, Lim (1997) found a negative relationship between supervisor support and job insecurity, while Probst (2005) reported a negative relationship between participative decision making and job insecurity. Accordingly, we hypothesize:

H3. Leader support relates negatively to job insecurity.

Cooperation among co-workers may reduce the possibility of competition and conflicts among employees, both of which are conducive for the development of job insecurity perceptions (Glambek *et al.,* 2014). Evidence for this assumption can be found in studies demonstrating a negative relationship between job insecurity and co-worker support (Lim, 1997) and a positive relationship between job insecurity and exposure to bullying behaviors (Glambek *et al.*, 2014). In line with these theoretical and empirical arguments, we hypothesize:

H4. Co-worker cooperation relates negatively to job insecurity.

PC and occupational self-efficacy

COR theory further states that employees who possess more resources are not only less vulnerable to resource loss, but are also more capable of resource gain. Additionally, initial resource gain begets further gain (Hobfoll, 2018). Self-efficacy has previously been categorized as an internal COR resource (Holmgreen *et al.*, 2017). In this regard, occupational self-efficacy may be valuable to an employee because it furnishes him/her with feelings of competence and facilitates the acquisition of additional resources, such as promotion and pay raise (Bandura, 1994).

Consistent with COR theory, we postulate that employees with greater access to WE resources may be more able to build on their internal resources (Hobfoll, 2018). Therefore, we expect to find a positive relationship between each PC dimension and occupational self-efficacy, delineated along three sources of self-efficacy beliefs: enactive mastery (i.e., repeated performance success), vicarious experience (i.e., modeling by effective models) and verbal persuasion (i.e., realistic encouragement of performance) (Gist and Mitchell, 1992). The fourth category, physiological arousal, has been omitted because it is less relevant for the present study.

Job challenge may facilitate the accumulation of mastery experiences, a mechanism that is considered the most influential source of self-efficacy (Bandura, 1994). As outlined in both Job Characteristics Theory (Hackman and Oldham, 1976) and the Job Demands-Resources (JD-R) model (Bakker and Demerouti, 2007), job characteristics subsumed by this PC factor (i.e., job challenge and variety, job importance and job autonomy) have a motivational potential that stimulates the willingness of employees to invest effort and stay committed to meeting work-related goals. As a result, these characteristics increase the likelihood of successful task completion and goal attainment (Bakker and Demerouti, 2007). Because repeated performance success might more readily occur when employees perceive many opportunities to autonomously perform challenging and important tasks, we contend that job challenge will positively relate to occupational self-efficacy. This line of reasoning has been empirically substantiated by studies reporting positive correlations between efficacy beliefs and variables that conceptually correspond to job autonomy (e.g., Parker, 1998), job challenge (e.g., Schaubroeck *et al.*, 2001) and job importance (e.g., Jex and Bliese, 1999). To summarize, we hypothesize:

H5. Job challenge relates positively to occupational self-efficacy.

A similar line of reasoning may be applied to an examination of the relationship between role harmony and occupational self-efficacy. Namely, mastery experiences might more readily accumulate when employees are clear about and congruent with their assignments. In this vein, role clarity has been framed as a resource that fosters the achievement of work goals (Bakker and Demerouti, 2007). Consistent with this assumption, Jex *et al.* (2001) found a positive relationship between self-efficacy and role clarity. Accordingly, we hypothesize:

H6. Role harmony relates positively to occupational self-efficacy.

Leader support may also facilitate mastery experiences, where repeated performance success may more readily occur when employees perceive that their leaders encourage good performance and are receptive to their opinions and ideas. Additionally, leaders may serve as effective models and a source of verbal persuasion. Bandura (2009) argued that empowering leadership represents one of the ways an organization might influence employee's efficacy beliefs system. Indirect empirical support for this argument was provided by Schyns *et al*. (2002), who demonstrated a positive relationship between occupational self-efficacy and leader-member exchange. Therefore, we hypothesize:

H7. Leader support relates positively to occupational self-efficacy.

Finally, cooperation among co-workers may be conducive to mastery experiences, where performance success may be facilitated by co-workers who provide work-related support (e.g., offer help and share knowledge). As with leaders, co-workers may also use verbal persuasion to encourage each other's performance and serve as effective models, thus contributing to one's efficacy beliefs (Schyns *et al*., 2002). In line with this reasoning, Xanthopoulou *et al.* (2007)

found a positive relationship between co-worker support and general self-efficacy. Accordingly, we hypothesize:

H8. Co-worker cooperation relates positively to occupational self-efficacy.

The mediating role of occupational self-efficacy in the relationships between PC dimensions and job insecurity

Consistent with COR principles, we further contend that occupational self-efficacy will negatively relate to job insecurity. As for the PC dimensions, occupational self-efficacy is assumed to function as a resource that predicts the level to which employees are able to counteract the threat of potential job loss. However, in contrast to the PC dimensions, we regard occupational self-efficacy as a more proximal, internal resource that is to a certain extent dependent on external resources (see above).

In particular, we suggest that, of all the available internal resources, occupational self-efficacy may have a more pronounced role in shaping job insecurity perceptions. First, efficacy beliefs influence the outcomes that people anticipate (Bandura, 2000). As such, employees who are convinced of their ability to perform well in a job may perceive a lower threat of losing that job. After all, those with high occupational self-efficacy will exhibit better job performance (König *et al.*, 2010). As a result, these employees will be more able to secure their positions because employers are less likely to dismiss high performers. Second, occupational self-efficacy may negatively relate to job insecurity even when job insecurity arises from external, uncontrollable factors (e.g., economic crisis). In such circumstances, efficacy beliefs might shape the manner in which employees interpret ambivalent information and situations. Namely, those with strong beliefs in their ability to successfully master various job-related challenges might

also believe that they will successfully master a job insecure situation, by either keeping the present job against all odds or finding a new one (De Cuyper *et al.*, 2012). The idea of negative relationship between occupational self-efficacy and job insecurity has received empirical support (König *et al.*, 2010; Schreurs *et al.,* 2010).

To summarize, the pattern of assumptions presented here forms a basis for a mediation model that specifies occupational self-efficacy as the explaining mechanism underlying the negative relationships between PC dimensions and job insecurity. In line with COR principles, we assume that WE resources may be conducive for the development of additional control-based constructs (cf. Xanthopoulou *et al.*, 2007), such as organization-based self-esteem (Pierce and Gardner, 2004) and optimism (Scheier *et al.,* 1994). These constructs, in turn, might negatively relate to job insecurity. Accordingly, we hypothesize a partial mediation:

H9. The negative relationship between job challenge and job insecurity is partially mediated by occupational self-efficacy.

H10. The negative relationship between role harmony and job insecurity is partially mediated by occupational self-efficacy.

H11. The negative relationship between leader support and job insecurity is partially mediated by occupational self-efficacy.

H12. The negative relationship between co-worker cooperation and job insecurity is partially mediated by occupational self-efficacy.

--- Figure 1 about here ----

Method

Participants and procedure

Data were collected in the spring of 2016 as part of a larger research project examining WE determinants of job insecurity and perceived employability. HR managers from one of the largest ICT companies in Croatia were contacted and provided with information about the purpose of the study. In exchange for participation, a report with climate analysis was prepared for the organization. HR managers first launched a call via the company network to inform employees about the study and emphasize the importance of participation for all parties involved (e.g., providing the organization with anonymous feedback that could be used for improvement of the WE). In the following step, an electronic questionnaire was administered to 529 employees. The confidentiality of the data and the voluntary nature of participation were emphasized. Following two reminders for questionnaire completion, a total of 344 employees completed the survey (response rate = 65%). Because estimation of PC items requires individuals to recall and integrate information that has been collected over a certain period of time in a particular work setting (James et al., 1978b), participants who were employed in the organization part-time or for a period of less than 6 months were excluded. As a result, the effective sample size was 329 employees (response rate = 62%). This response rate is considerably higher than the average response rate of 36% in organizational studies (see Baruch and Holtom, 2008), which might be attributed to the high commitment of the HR managers who invested considerable effort in motivating employees to participate.

The sample was composed entirely of white-collar employees and around two thirds of the participants were men (67.2%). The mean age was 36 years (SD = 9.06), ranging from 22 to 63 years. Most of the participants were highly educated (90.3% had an MA level education or

higher) and were employed on a permanent contract (97%). The mean organizational tenure was 6.49 years (*SD* = 5.43) and ranged from 6 months to 37 years. Finally, 71.4% of participants had no managerial position, 21% had a lower level position, 5.2% had a middle level position and 2.4% had a high level position.

Measures

The measure of job insecurity used in the present study was readily available in Croatian (Tomas and Maslić Seršić, 2015). The two remaining measures (PCQ and occupational self-efficacy scale) were subjected to a translation and back-translation procedure (Behling and Law, 2000).

Psychological climate was measured with the adapted version of the PC questionnaire (PCQ), originally developed by James and colleagues (cf. James and James, 1989). These authors generated questionnaire items from an extensive literature review that encompassed various measures and conceptualizations of WE attributes with relatively direct ties to individual experience (e.g., Blau, 1954; Hackman and Lawler, 1971; Rizzo *et al.*, 1970, Taylor, 1971; Vroom, 1960) (cf. James *et al.*, 1978a; Jones and James, 1979). The PCQ developed by James and James (1989) consists of 17 sub-dimensions (i.e., PC variables). However, more recent adaptations of this questionnaire encompass a fewer number of sub-dimensions (cf. Baltes *et al.*, 2002; Baltes *et al.*, 2009; Gagnon *et al.,* 2009). Because shorter measures are more readily applicable in organizational settings, we aligned with these more recent versions in the present study. For that purpose, we conducted two preliminary validation studies with two independent samples aiming to obtain a psychometrically sound measure of PC that would be applicable in diverse organizations. As a result, the adapted PCQ totaled 8 sub-dimensions measured by 37 items[3]. Due to the high correlation between role harmony and leader support ($r = 0.89$), suggesting that employees strongly attributed characteristics of their pursued roles to their

leadership, these two dimensions were merged into a single dimension. Job challenge and autonomy was measured by three sub-dimensions: job challenge and variety (5 items; e.g., 'My job challenges my abilities'), job autonomy (5 items; e.g., 'I am allowed to schedule my own work.') and job importance (4 items; e.g., 'I feel that my work is highly important'). Cronbach's alpha for the total scale (14 items) was 0.82. Role harmony and leader support was measured by four sub-dimensions: role clarity (4 items; e.g., 'My work assignments are clearly defined'), role congruence (5 items; e.g., 'I have to do things that should be done differently', reversely coded) leader goal emphasis and work facilitation (5 items; e.g., 'My supervisor emphasizes high standards of performance') and participative decision making (4 items; e.g., 'I can influence the decisions of my supervisor regarding things which concern my job.'). Cronbach's alpha for the total scale (18 items) was 0.92. The co-worker cooperation represented one dimension measured by 5 items (e.g., 'There is a feeling of cooperation among my colleagues'). Cronbach's alpha for this scale was 0.91. All responses were provided on a scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Based on the content of the subscales, we feel confident in concluding that the adapted PCQ reflects the conceptual core of original PC model (James and James, 1989), in that it encompasses the perceived extent to which jobs are challenging, roles are harmonious, leaders are supportive and co-workers are cooperative.

Occupational self-efficacy. To measure occupational self-efficacy, we used the short version of the occupational self-efficacy scale, initially developed by Schyns and von Collani (2002) and subsequently shortened by Rigotti *et al.* (2008). This scale is comprised of 6 domain-specific items consistent with the work context (e.g., 'Whatever comes my way in my job, I can usually handle it'). Responses were provided on a scale ranging from 1 (*not at all true*) to 6 (*completely true*). Cronbach's alpha for the occupational-self efficacy scale was 0.85.

Job insecurity was measured using a 4-item job insecurity scale developed by De Witte (2000) and validated by Vander Elst *et al*. (2014). Participants provided responses on a scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The sample item is 'I think I might lose my job in the near future'. Cronbach's alpha for this scale was 0.90.

Control variables. In order to exclude alternative explanations for the obtained results, we controlled for several demographic and work-related characteristics that relate to occupational self-efficacy and job insecurity (e.g., Keim et al., 2014; Schaubroeck *et al.*, 2001). This included: gender (0 = male, 1 = female), age (in years), education (recoded in two dummy variables with *MA degree* as the reference group), and managerial position (recoded in three dummy variables with *no managerial position* as the reference group). Because 97% of participants were employed on a permanent contract, we did not control for contract type.

Data analyses

The analyses were conducted within the structural equation modeling (SEM) framework in R 3.2.3 (R Core Team, 2015) by means of the Lavaan package (Rosseel, 2012). Because data did not reveal any violations of normality (skewness indices were less than 3; kurtosis indices were less than 10) or multi-collinearity (i.e., $r > 0.85$), we used the maximum likelihood estimation procedure (Weston and Gore, 2006).

In the first step, we ran the CFA in order to test the construct validity of all study variables. For this purpose, we tested the hypothesized 5-factor measurement model with three PC dimensions (where job challenge, role harmony and leader support were specified as second-order factors and co-worker cooperation was specified as a first-order factor), occupational self-efficacy and job insecurity. All indicators were allowed to load onto their respective factor and

all factors were allowed to correlate. In addition, we compared the hypothesized measurement model with theoretically plausible alternative models using χ^2-difference tests.

In the second step, we examined two hypothesized structural models. The first model tested the unique contribution of each PC dimension in explaining variance in job insecurity (addressing *H1-H4*), while the second model tested the hypothesized mediating role of occupational self-efficacy in the relationships between PC dimensions and job insecurity (addressing *H5-H12*). To test the significance of the direct and indirect effects, we used the bootstrap method with 10,000 resamples and constructed 95% bias-corrected (BC) confidence intervals (CI). This method represents the preferred method for testing the significance of indirect effects as it does not impose normality assumptions of their sampling distributions. As a result, it has higher statistical power than methods based on a ratio of the mediated effects and the corresponding standard error (MacKinnon *et al.*, 2007). The effect is considered statistically significant if the confidence interval for the corresponding effect does not contain zero (Preacher and Hayes, 2008).

The overall goodness-of-model-fit was evaluated with a combination of fit indices: standardized root mean square residual (SRMR), comparative fit index (CFI) and root mean square error of approximation (RMSEA) with a corresponding 90% confidence interval. An acceptable fit between the hypothesized model and the observed data is indicated when values of SRMR and RMSEA are close to or below 0.08, the upper RMSEA 90%-confidence interval is less than 0.10 and the value of CFI equals or exceeds 0.90 (Bentler, 1990; Hu and Bentler, 1999).

Results

Descriptive statistics

Means, standard deviations, Cronbach's alphas and correlations for all study variables are presented in Table 1.

--- Table 1 about here ----

Measurement model

The results of the CFA demonstrated that the hypothesized 5-factor measurement model fitted the data acceptably well ($\chi^2(1017) = 1938.19$, $p < 0.001$, CFI = 0.90, RMSEA = 0.052, 90% CI [0.049–0.056], SRMR = 0.067) and significantly better than each alternative nested model: (1) three 4-factor models in which indicators intended to measure one of the PC factors and occupational-self efficacy loaded onto one factor and the remaining indicators loaded onto their respective factor; (2) three 4-factor models in which indicators intended to measure one of the PC factors and job insecurity loaded onto one factor and the remaining indicators loaded onto their respective factor; (3) a 4-factor model in which indicators intended to measure occupational self-efficacy and job insecurity loaded onto one factor and the remaining indicators loaded onto their respective factor; and (4) a one-factor model. The values of $\Delta\chi^2$ ranged from 742.68 to 3994.83 and were all statistically significant at $p < 0.001$. A table presenting detailed findings of all CFAs is available upon request from the first author.

In regards to the model parameters, all indicators were significantly and positively related to the corresponding latent factor (standardized regression weights ranged from 0.58 to 0.92), all first-order PC factors loaded highly onto the corresponding second-order factor (standardized second-order factor regression weights ranged from 0.72 to 0.90) and factor correlations ranged

from |0.13| to |0.74|. Standardized factor loading for items measuring occupational self-efficacy and job insecurity are presented in the Appendix. The model did not include specified correlations between indicator error variances. The presented empirical data thus substantiate previous claims regarding the construct validity of the study measures (Brown, 2006).

Structural models

The first hypothesized structural model with specified direct effects of each PC dimension on job insecurity provided an acceptable fit to the data ($\chi^2(1044) = 1834.47$, $p < 0.001$, CFI = 0.90, RMSEA = 0.048, 90% CI [0.044–0.052], SRMR = 0.066). The model included two theoretically meaningful error correlations between items that loaded onto the same dimension. The model parameters pertaining to the study hypotheses are presented in Table 2.

Consistent with *H1*, job challenge negatively related to job insecurity ($B = -0.32$, $p < 0.05$, 95% CI [-0.64, -0.00]). The remaining two PC dimensions - role harmony and leader support (representing one higher-order factor) ($B = 0.11$, $p > 0.05$, 95% CI [-0.35, 0.57]) and co-worker cooperation ($B = -0.15$, $p > 0.05$, 95% CI [-0.32, 0.01]) - did not relate to job insecurity. Accordingly, H2, H3 and H4 were not supported. Taken together, the total effect of PC on job insecurity was statistically significant and negative ($B = -0.36$, $p < 0.001$, 95% CI [-0.59, -0.18]). This effect was due to a single PC dimension - job challenge. In regards to the control variables, older employees perceived more job insecurity ($B = 0.02$, $p < 0.001$, 95% CI [0.01, 0.03]), while gender, education and managerial position did not relate to job insecurity. All together, the amount of explained variance in job insecurity equaled 17%.

The second hypothesized structural model additionally included indirect effects of PC dimensions on job insecurity through occupational self-efficacy. This model yielded an

acceptable fit to the data ($\chi^2(1044) = 1834.47$, $p < 0.001$, CFI = 0.90, RMSEA = 0.048, 90% CI [0.044–0.052], SRMR = 0.066). Five theoretically meaningful error correlations were specified between items that loaded onto the same (sub)dimension. The model parameters pertaining to the study hypotheses are presented in Table 2 and Figure 2.

Job challenge positively related to occupational self-efficacy ($B = 0.54$, $p < 0.01$, 95% CI [0.23, 0.84]), thus supporting *H5*. Furthermore, the relationship between job challenge and job insecurity was fully mediated by occupational self-efficacy ($B = -0.25$, $p < 0.01$, 95% CI [-0.42, -0.08]), thereby providing partial support for *H9*. Role harmony and leader support did not relate to occupational self-efficacy ($B = -0.19$, $p > 0.05$, 95% CI [-0.57, 0.19]), refuting *H6* and *H7*. Consistent with these results, the relationship between role harmony and leader support and job insecurity was not mediated by occupational self-efficacy ($B = 0.09$, $p > 0.05$, 95% CI [-0.09, 0.27]). Accordingly, no evidence was found for *H10* and *H11*. The relationship between co-worker cooperation and occupational self-efficacy was non-significant ($B = 0.01$, $p > 0.05$, 95% CI [-0.11, 0.14]), refuting *H8*, as was the indirect effect of co-worker support on job insecurity through occupational self-efficacy ($B = -0.01$, $p > 0.05$, 95% CI [-0.07, 0.05]), thus refuting *H12*. In regards to the control variables, women expressed lower levels of occupational self-efficacy than men ($B = -0.16$, $p < 0.05$, 95% CI [-0.29, -0.03]). Additionally, older workers perceived more job insecurity ($B = 0.02$, $p < 0.001$, 95% CI [0.01, 0.03]), whereas employees with a higher level position perceived less job insecurity than employees with no managerial position ($B = -0.58$, $p < 0.05$, 95% CI [-1.15, -0.01]). The remaining control variables did not relate significantly to occupational self-efficacy or job insecurity. All together, the amount of explained variance in occupational self-efficacy and job insecurity equaled 26%.

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--- Table 2 about here ----

Discussion

This study tested a hypothesized mediation model that specifies PC dimensions as predictors of job insecurity via occupational self-efficacy. As such, it aimed to contribute new knowledge to the currently limited and fragmented understanding regarding the relative importance of diverse WE antecedents of job insecurity. In addition, it aimed to make a contribution to the almost non-existing knowledge regarding the specific mechanisms explaining the relationship between WE variables and job insecurity. Together, both contributions can be considered under a common denominator in that they add to the relatively understudied, yet relevant area of job insecurity research aimed at reducing this phenomenon.

Our findings demonstrated that job challenge had a unique negative contribution in predicting variance in job insecurity, a finding that aligns with the assumption that employees with greater resources in terms of the synergistic combination of challenging, autonomous and important tasks are less vulnerable to job insecurity (Hobfoll, 2001). This finding is also indirectly consistent with research demonstrating negative relationships between various lower-order job characteristics and job insecurity (where job control is the most extensively studied proxy of job challenge; for an example, see Mauno and Kinnunen, 2002; Schreurs *et al.,* 2010).

Interestingly, the relationship between job challenge and job insecurity was fully mediated by occupational self-efficacy. A possible explanation for why occupational self-efficacy exerts such a prominent role in the job challenge-job insecurity relationship might be found in Social Cognitive theory, in which Bandura (1994) argues that mastery experiences are the most influential source of efficacy beliefs, particularly when success results from perseverant

effort. Arguably, individuals whose jobs allow them to autonomously engage in challenging and important tasks are in a situation in which they might continuously experience such effortful success. Indeed, our results demonstrated a rather strong relationship between job challenge and occupational self-efficacy ($\beta = 0.56$), a finding that has been indirectly supported by previous research (e.g., Salanova *et al.*, 2002; Schaubroeck *et al.*, 2001; Schyns and von Collani, 2002). Conditional upon the mediation was also the observed negative relationship between occupational self-efficacy and job insecurity (cf. Schreurs *et al.*, 2010). This finding coincides with the notion that occupational self-efficacy functions as an internal resource that promotes one's feelings of being able to influence and secure his/her job position (Bandura, 2000; Holmgreen *et al.*, 2017).

In contrast to the job challenge dimension, the remaining PC dimensions (role harmony and leader support and co-worker cooperation) did not predict job insecurity directly or indirectly via occupational self-efficacy. The absence of significant direct effects is somewhat surprising given that previous studies found significant relationships between job insecurity and several role (e.g., Keim *et al.*, 2014), leader (e.g., Kinnunen and Nätti, 1994) and co-worker (Lim, 1997) characteristics. However, these studies focused mostly on one subset of WE variables, without accounting for the effects of others. For example, Ashford *et al.* (1989) placed the focus on role ambiguity and role conflict, while Kinnunen and Nätti (1994) examined employee relationships with supervisors as antecedents to job insecurity. In contrast, our study simultaneously accounted for variables from job, role, leader and co-worker domains. Accordingly, while previous studies demonstrated that role, leader and co-worker characteristics exert some effects on perceptions of job insecurity, our study indicates that the relationship

between job insecurity and these WE dimensions may be less relevant than job characteristics themselves.

Arguably, this reasoning might also explain the non-significant indirect effects via occupational self-efficacy, where role harmony and leader support and co-worker cooperation may be less relevant for the development of efficacy beliefs in comparison to job challenge. It is plausible that everyday job accomplishments are not as closely tied to role, leader and co-worker characteristics as they are to the characteristics of job tasks themselves. Furthermore, two other mechanisms that might play a role in these two PC dimensions – vicarious experience and verbal persuasion – are generally less influential in shaping efficacy beliefs (Bandura, 2000). Again, we are unaware of any studies that simultaneously examined variables from all four WE domains in relation to occupational self-efficacy. However, consistent with our findings, Parker (1998) found that task control, but not employee influence in decision-making, significantly predicted change in role breadth self-efficacy.

All together, the results of this study contribute to current knowledge in line with the following. To the best of our knowledge, this is the first study that simultaneously tested perceptions of jobs, roles, leaders and co-workers' in relation to job insecurity, and thus had more strength to decipher latent relationships that were not detectable in studies focusing only on specific WE variables (cf. James *et al.*, 2008). The results demonstrated that among these four WE domains, challenging jobs have particular importance in predicting job insecurity perceptions. This relationship was fully explained by occupational self-efficacy. This finding not only contributes to unravelling the yet unexplored mechanisms underlying the relationships between WE variables and job insecurity, but also demonstrates that employee efficacy beliefs have a prominent role in this relationship.

Limitations and suggestions for future research

We acknowledge several limitations of the present study. First, a main limitation lies in the cross-sectional research design, which limits the possibility for drawing unequivocal causal conclusions. In positioning WE variables as the antecedents of occupational self-efficacy and job insecurity, we were guided by the premise that changes in the person take place in response to his/her WE (Speier and Frese, 1997). This idea is supported by longitudinal studies demonstrating that WE variables predict both change in the level of one's efficacy beliefs (Parker, 1998) and job insecurity (Glambek *et al.*, 2014). However, we cannot completely rule out that the opposite is (also) true (e.g., that increased job insecurity contributes to less cooperation among employees or that employees with higher efficacy-beliefs choose tasks that are more challenging and autonomous). We view these alternative explanations (i.e., reversed and reciprocal causation) as fruitful venues for future longitudinal studies.

A second limitation arises from the fact that all variables were measured by self-reports. We believe this approach has both advantages and disadvantages. First, occupational self-efficacy and job insecurity are highly subjective phenomena and therefore may not be validly assessed by other raters. Second, an individual's interpretation of his/her environment and capabilities should more strongly influence individual outcomes than more objective variables (James *et al.*, 1978). However, self-reports may also increase the risk of a common method bias. In order to *a priori* diminish this possibility, we followed the instructions proposed by Podsakoff *et al.* (2003) (e.g., confidentiality was emphasized, the fact that there were no right or wrong answers was stressed, the proximal separation of study variables was increased and all scale points (rather than just end points) were labelled). Nevertheless, this methodological artefact

might be eliminated in future studies by obtaining measures of WE from other sources (e.g., key informants).

Another limitation arises from the possible bias of the sample on two levels. First, because an incentive to participate in the study was provided via a report of the study results, the organizations that agreed to participate might have been those who are generally more motivated to improve the psychosocial WE of employees. Second, the employees who agreed to participate in this type of research might also represent those more willing to express their opinions about their WE (e.g., those with more positive attitudes). Although it was difficult to influence the bias at the level of the organization, we attempted to influence employee bias by intensively collaborating with the HR department in order to motivate each employee to participate. As a result, while we are unable to rule out the first bias, the high employee response rate allows us to fairly confidently rule out the second bias.

Due to the high correlation obtained between role harmony and leader support, the PCQ used in our study encompassed three PC factors. Although our measure did include sub-dimensions of each PC factor corresponding to all four situational referents (i.e., jobs, roles, leaders and coworkers), the results of our study are limited in terms of understanding of the separate effects of the leader and role dimensions. The plausible reason for the high overlap of the role and leader dimensions might be derived from role theory, which defines roles as a pattern of behaviors that employees perceive as expected from them (cf. Tubre and Collins, 2000). Accordingly, employees might perceive a link between their roles and leaders, to the extent in which leaders are perceived to be the source of these expectations. For example, a perception of a clearly defined role might be strongly related to the perception of a transparent leader who clearly defines work goals and performance expectations. This argument is supported

by a study by House and Rizzo (1972), who reported moderate to strong correlations between role (i.e., ambiguity and conflict) and leader (i.e., supportive leadership and leader structure and standard setting) dimensions.

A final limitation arises from the fact that the results are based on a homogenous sample of white-collar, highly educated and, on average, younger employees from the ICT sector. Accordingly, the generalizability of results is limited and should be replicated among various occupational groups.

Practical implications

Although the results of this study are not causal, the observed relationship between job challenge and job insecurity via occupational self-efficacy indicates that well-designed jobs might have even greater benefits beyond increased work motivation, job satisfaction and performance (Hackman and Oldham, 1976). Namely, such jobs might also facilitate the development of employee efficacy beliefs that, in turn, make employees more resistant to perceptions of job insecurity. Accordingly, organizations might reap multiple benefits from investing in job redesign (e.g. job enrichment interventions). Through such initiatives, employees might perceive higher levels of job challenge when given opportunities to autonomously perform complex and variable tasks that contribute to the organization and other organizational members (Hackman and Oldham, 1976; Karasek, 1979). For example, employees might be given more opportunities to perform tasks that provide new learning opportunities, that are accompanied by a wider span of control over time and method of accomplishment and that make a meaningful contribution to a broader scope of employees or the entire organization. Importantly, because similarly designed jobs might not be perceived as equally challenging by all individuals, these interventions should be tailored to the individual (James *et al.*, 2008).

In conclusion, our study sheds light on another potentially fruitful, yet overlooked direction for countering perceptions of job insecurity in which challenging jobs have the potential to strengthen employee efficacy beliefs.

Notes

1. A more detailed list of references for these validation studies can be obtained upon request from the first author.

2. The role stress and lack of harmony dimension has been reframed into a role harmony dimension in order to reflect the WE resource and, as such, coincide with the terminology used in the Conservation of Resources theory (as described in following paragraphs). Additionally, we refer to co-workers instead of work-group in the present study. While this term does not change the meaning of the dimensions, it does increase its generalizability to more diverse organizational structures.

3. It should be noted that the exact number and specific names of PC sub-dimensions vary depending on the version of the PCQ used (Baltes, 2001). The selection of sub-dimensions in our study was based on a combination of theoretical and empirical criteria. In the first step, we selected the initial list of 11 sub-dimensions that were judged to be most representative of the core psychological meaning of the four PC factors and that were most frequently included in the currently used shorter versions of the PCQ (cf. Baltes *et al.*, 2002; Baltes *et al.*, 2009; Gagnon *et al.,* 2009). These sub-dimensions were: job challenge and variety, job autonomy, job importance, role clarity, role congruence, optimal workload, leader goal emphasis and work facilitation, participative decision making, leader trust and support, co-worker cooperation and co-worker friendliness and warmth. Based on empirical criteria, we further excluded three sub-dimensions from this list, where two of them (i.e., leader trust and support and co-workers' cooperation) were shown as empirically redundant, i.e., highly overlapping with the remaining sub-dimension(s) of the corresponding factor and one of them (i.e., optimal workload) loaded poorly onto the corresponding factor. A more detailed report about the method and results of the validation studies is available upon request from the first author.

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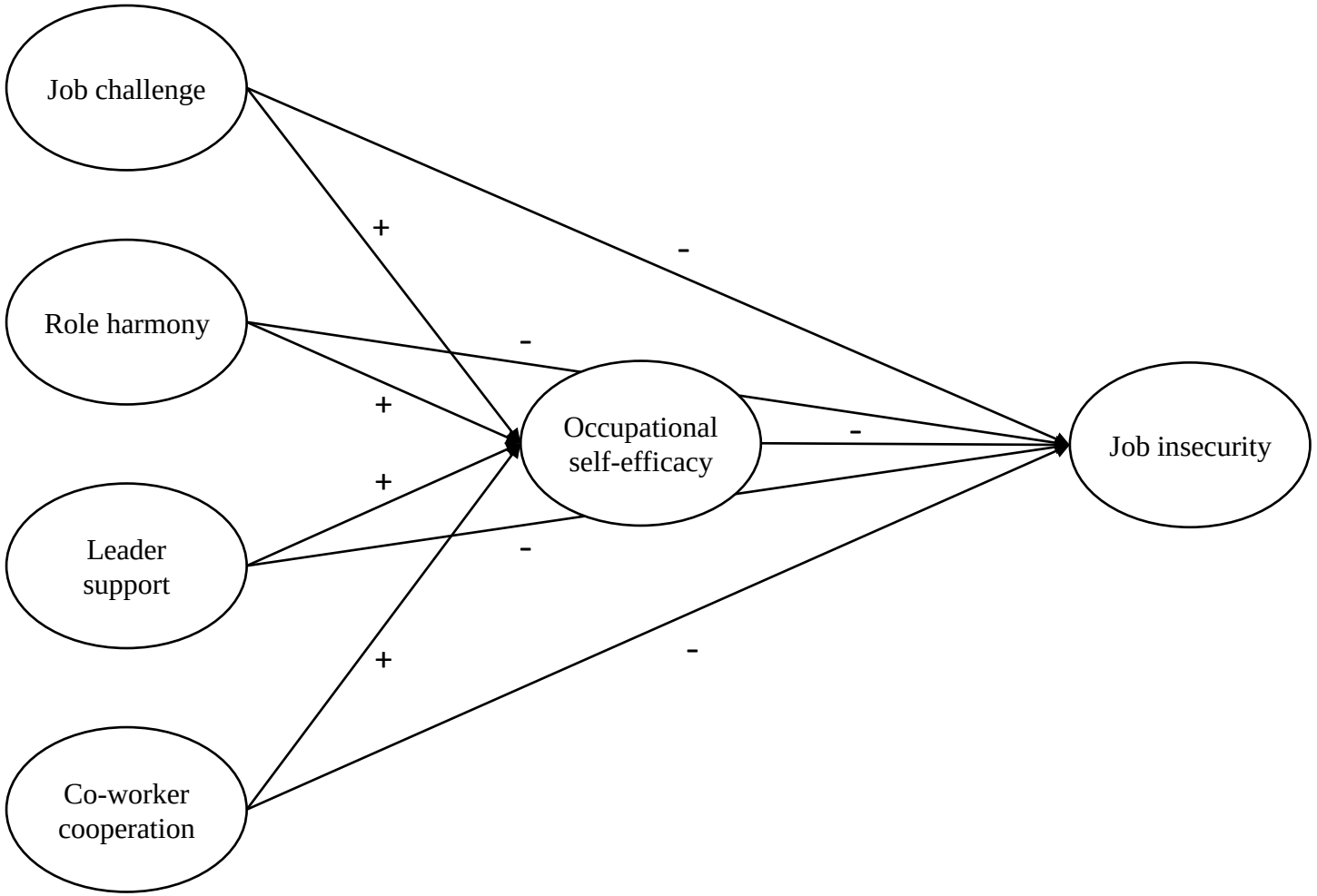

Figure 1. Hypothesized mediation model

	M	*SD*	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1. Female[a]	-	-	-												
2. Age	36.09	9.06	-0.10	-											
3. High school[a]	-	-	-0.01	0.22**	-										
4. PhD[a]	-	-	-0.10	0.16**	-0.09	-									
5. Temporary contract[a]	-	-	0.04	-0.13*	0.01	-0.05	-								
6. Lower level position[a]	-	-	-0.01	0.08	-0.07	-0.06	-0.09	-							
7. Middle level position[a]	-	-	-0.13*	0.14**	0.02	0.04	-0.04	-0.12*	-						
8. Higher level position[a]	-	-	-0.03	0.21**	-0.05	0.34**	-0.03	-0.08	-0.04	-					
9. Job challenge	3.64	0.56	0.01	0.17**	0.04	-0.01	-0.04	0.17**	0.16**	0.18**	(0.90)				
10. Role harmony and leader support	3.52	0.59	0.06	-0.01	-0.06	-0.09	0.02	0.01	0.03	0.05	0.60**	(0.92)			
11. Co-workers' cooperation	3.99	0.73	0.01	-0.11*	-0.03	-0.08	0.02	-0.05	-0.02	-0.01	0.34**	0.60**	(0.91)		
12. Occupational self-efficacy	5.01	0.56	-0.08	0.14*	0.07	-0.11	-0.11*	0.10	-0.01	0.01	0.38**	0.25**	0.10	(0.85)	
13. Job insecurity	2.08	0.76	0.04	0.22**	0.14*	0.10	0.14**	0.01	-0.04	-0.06	-0.20**	-0.22**	-0.21**	-0.32**	(0.90)

Table 1. Descriptive statistics, correlations and scale reliabilities (in the brackets)

Notes: * $p < 0.05$; ** $p < 0.01$.

[a] Dummies: The reference groups are males, MA degree, MA degree, permanent contract, no managerial position, no managerial position, no managerial position.

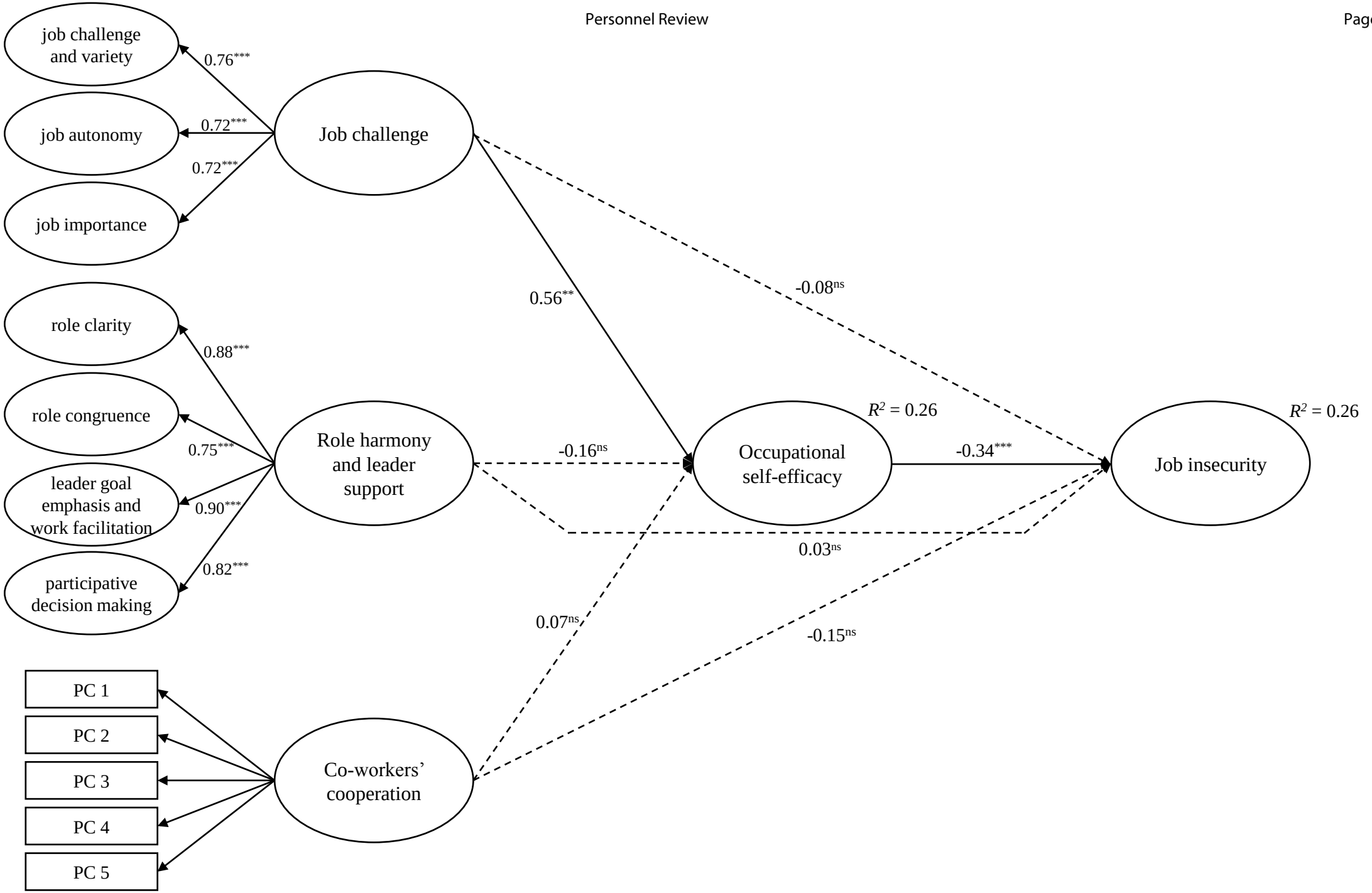
job challenge and variety
job autonomy
job importance
0.76***
0.72***
0.72***
Job challenge
role clarity
role congruence
leader goal emphasis and work facilitation
participative decision making
0.88***
0.75***
0.90***
0.82***
Role harmony and leader support
0.56**
-0.08ns
-0.16ns
Occupational self-efficacy
R2 = 0.26
-0.34***
Job insecurity
R2 = 0.26
0.03ns
0.07ns
-0.15ns
PC 1
PC 2
PC 3
PC 4
PC 5
Co-workers' cooperation

Figure 2. Structural model

Notes: Presented are standardized values; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; ns = non-significant. Due to figure clarity, presented are only structural effects and control variables are omitted.

	Unstandardized estimates	Standardized estimates	*p*	Bootstrapping BC 95% CI[a]	
				Lower	Upper
Results of the model testing direct effects of PC on job insecurity					
Direct effects					
job challenge → JI	-0.32	-0.26	0.048	-0.644	-0.003
role harmony and leader support → JI	0.11	0.07	0.633	-0.348	0.573
co-workers' cooperation → JI	-0.15	-0.15	0.068	-0.318	0.011
job challenge + role harmony and leader support + co-workers' cooperation → JI	-0.36	-0.35	< 0.001	-0.564	-0.165
female[b] → JI	0.09	0.05	0.351	-0.093	0.263
age → JI	0.02	0.23	< 0.001	0.009	0.030
high school[b] → JI	0.24	0.09	0.115	-0.057	0.527
PhD[b] → JI	0.31	0.11	0.073	-0.029	0.658
lower level position[b] → JI	0.04	0.02	0.717	-0.174	0.253
middle level position[b] → JI	-0.16	-0.05	0.409	-0.554	0.226
higher level position[b] → JI	-0.53	-0.11	0.080	-1.123	0.064
Results of the model testing indirect effects of PC on job insecurity through occupational self-efficacy					
Direct effects					
job challenge → OCCSE	0.54	0.56	0.001	0.233	0.837
role harmony and leader support → OCCSE	-0.19	-0.16	0.334	-0.571	0.194
co-workers' cooperation → OCCSE	0.01	0.02	0.837	-0.114	0.140
OCCSE → JI	-0.47	-0.34	< 0.001	-0.667	-0.269
job challenge → JI	-0.11	-0.08	0.562	-0.459	0.249

role harmony and leader support → JI	0.04	0.03	0.859	-0.410	0.492
co-workers' cooperation → JI	-0.15	-0.15	0.060	-0.309	0.007
female[b] → OCCSE	-0.16	-0.13	0.018	-0.294	-0.027
age → OCCSE	0.01	0.10	0.116	-0.001	0.013
high school[b] → OCCSE	0.07	0.03	0.547	-0.149	0.280
PhD[b] → OCCSE	-0.25	-0.11	0.055	-0.503	0.005
lower level position[b] → OCCSE	0.03	0.02	0.728	-0.131	0.187
middle level position[b] → OCCSE	-0.18	-0.07	0.235	-0.467	0.115
higher level position[b] → OCCSE	-0.12	-0.03	0.588	-0.562	0.318
female[b] → JI	0.01	0.01	0.919	-0.164	0.182
age → JI	0.02	0.26	< 0.001	0.013	0.032
high school[b] → JI	0.27	0.10	0.061	-0.012	0.546
PhD[b] → JI	0.20	0.07	0.244	-0.134	0.527
lower level position[b] → JI	0.06	0.03	0.592	-0.149	0.260
middle level position[b] → JI	-0.25	-0.07	0.200	-0.623	0.130
higher level position[b] → JI	-0.58	-0.12	0.046	-1.152	-0.012
Indirect effects					
job challenge → OCCSE → JI	-0.25	-0.19	0.004	-0.420	-0.081
role harmony and leader support → OCCSE → JI	0.09	0.05	0.339	-0.093	0.269
co-workers' cooperation → OCCSE → JI	-0.01	-0.01	0.837	-0.066	0.053

Table 2. Results of the bootstrap analysis

Notes:

[a]for unstandardized values

[b]Dummies: The reference groups are males, MA degree, MA degree, no managerial position, no managerial position, no managerial position

OCCSE = occupational self-efficacy; JI = job insecurity.

Items	Cronbach's alpha coefficient	Standardized factor loadings
Occupational self-efficacy	0.85	
I can remain calm when facing difficulties in my job because I can rely on my abilities.		0.70
When I am confronted with a problem in my job, I can usually find several solutions.		0.79
Whatever comes my way in my job, I'm can usually handle it.		0.79
My past experiences in my job have prepared me well for my occupational future.		0.59
I meet the goals that I set for myself in my job.		0.66
I feel prepared for most of the demands in my job.		0.73
Job insecurity	0.90	
Chances are, I will soon lose my job.		0.86
I think I might lose my job in the near future.		0.87
I feel insecure about the future of my job.		0.92
I am sure I can keep my job. (R)		0.68

Appendix. Items measuring job insecurity and occupational self-efficacy with the corresponding standardized factor loadings from the 5-factor model and Cronbach's alpha coefficient

Notes: R = reverse-scored. All standardized factor loadings are statistically significant at $p < 0.001$.

List of the publications by James and colleagues reporting the results of the validation studies of the psychological climate questionnaire (PCQ)

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